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PATENT  
Docket No. H0001680

#5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Huggett et al.

: Confirmation No. 4849

Serial No. 09/815,141  
Filed: March 21, 2001

: Examiner R. Patel  
: Group Art Unit: 2838

For: ACTIVE FILTER FOR POWER DISTRIBUTION SYSTEM WITH  
SELECTABLE HARMONIC ELIMINATION

Assistant Commissioner for Patents  
Washington, D.C. 20231

RESPONSE TO OFFICE ACTION DATED JANUARY 3, 2002

Claims 1-27 are pending in this application.

Claims 1- 27 are rejected.

In the Office Action dated 3 January 2002, claims 1-17 and 26-27 are rejected under 35 USC §102(b) as being anticipated by Levran et al. (U.S. Patent No. 5,047,910), and claims 18-25 are rejected under 35 USC §103(a) as being unpatentable over Gunnarsson (U.S. Patent No. 6,115,269) in view of Bhattacharya et al (U.S. Patent No. 5,513,090). These rejections are respectfully traversed for the reasons that follow.

Claims 1-17 recite a power distribution system including an ac source connected to a power bus, capacitors shunt connected to the power bus, and an active filter shunt connected to a power bus. The active filter injects harmonic currents into the power bus. Claims 26-27 recite a method including injecting harmonics into a power bus.

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Levran et al. appear to show an inverter 1 that is operated as a dc-ac converter (by a controller 4), a power bus coupled to the inverter 1, and capacitors C1-C3 shunt connected to a power bus. However, Levran et al. don't disclose an active filter that injects harmonic currents into the power bus in order to achieve sinusoidal voltages. Even if the inverter 1 is characterized as an ac-source, Levran et al. still don't disclose an inverter-based active filter. Because Levran et al. do not disclose systems and methods having the limitation of claims 1-17 and 26-27, the '102 rejections should be withdrawn.

Claim 18 recites an active filter including an inverter, multiple stages for generating voltage commands for different harmonics, means for summing the commands, and a controller responsive to the summed commands. The commands cause the inverter to inject the harmonic currents into a power bus. Claims 19-25 recite an active filter including an inverter and a plurality of control loops. Each loop corresponds to a different multiple of capacitor bank Park Vector angle. Each control loop causes the inverter to inject a different harmonic current into the power bus.

Gunnarsson appears to disclose a system for reducing harmonics from a high voltage dc link, but does not disclose the claimed technique for controlling an inverter to inject harmonic currents into the power bus.

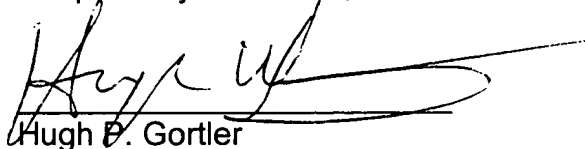
Bhattacharya et al. is concerned with the injection of harmonic *voltages* (in series with the line voltage) into a distribution system in order to minimize the harmonic currents that are created by the presence of non-linear loads. Bhattacharya discloses an active filter that operates as a current controlled harmonic voltage source, carrying only the fundamental current while only injecting harmonic voltages. Bhattacharya et al. do not teach or suggest a technique for generating harmonic currents and providing a source of harmonic currents for non-linear loads. Because Bhattacharya et al. do not teach or

suggest the differences between Gunnarsson and either of independent claims 18 or 19, the '103 rejections of claims 18-25 should be withdrawn.

A petition for a two month extension of time is attached. The petition extends the statutory period for response to June 3, 2002.

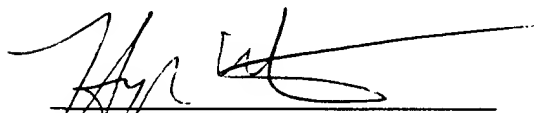
The examiner is respectfully requested to withdrawn the rejection of the claims and issue a notice of allowability. If any issues remain, the examiner is invited to contact the undersigned.

Respectfully submitted,



Hugh P. Gortler  
Reg. No. 33,890

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231 on June 3, 2002.

  
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Date: June 3, 2002